

IN THE CLAIMS:

The following is a complete listing of the claims, and replaces all earlier listings and all earlier versions.

1. (Previously Presented) A method of performing discrete wavelet transformation on an image signal, comprising:
 - a first step, of dividing the image into a plurality of first blocks each consisting of (W pixels by H pixels);
 - a second step, of performing a one-level forward wavelet transformation on each of the first blocks to produce sub-frequency band blocks LL, LH, HL, and HH;
 - a third step, of storing sub-frequency band blocks LL so as to produce second blocks having the same size as the first blocks and each consisting of sub-frequency band blocks LL obtained in said second step from four of the first blocks; and
 - a fourth step, of performing a one-level forward wavelet transformation on the second blocks.
2. (Previously Presented) A method according to claim 1, wherein the image is divided into a plurality of first groups each consisting of (n first blocks horizontally lined in the image by n first blocks vertically lined therein), and said second to fourth steps are performed on each first group.

3. (Previously Presented) A method according to claim 1, wherein: sub-frequency band blocks LL resulting from said fourth step are stored in units of the first group in order to produce third blocks having the same size as the first blocks; the third blocks are used as the first blocks and subjected to a one-level forward wavelet transformation; the image is divided into a plurality of second groups each consisting of (n first groups horizontally lined in the image by n first groups vertically lined therein); and production of the third blocks and wavelet transformation thereof are performed in units of the second group.

4. (Original) A method according to claim 3, wherein grouping to be performed according to a required resolution level meets the condition that each of groups to be produced at an i resolution level should consist of (n groups produced at an (i-1) resolution level to be horizontally lined in the image by n groups produced thereat to be vertically lined therein).

5. (Original) A method according to claim 4, wherein at the i resolution level, sub-frequency band blocks LL produced at the (i-1) resolution level are grouped in order to produce blocks having the same size as the first blocks, and the blocks are subjected to wavelet transformation.

6. (Currently Amended) A method according to claim 1, wherein the size of the first blocks is $[W+OW]*[H+OH]$ $[W+OW]*[H+OH]$, where OW denotes the number of columns and OH the number of rows shared by overlapping adjacent blocks.

7. (Previously Presented) A method according to claim 2, wherein n denotes 2.

8. (Previously Presented) A storage device storing computer-usable instructions for causing a programmable processing apparatus to become operable to perform a method according to any of claims 1 to 7 and 17.

9. (Previously Presented) A storage product storing computer-usable instructions for causing a programmable processing apparatus to become operable to perform a method according to any of claims 1 to 7 and 17.

10. (Previously Presented) A signal conveying computer-usable instructions for causing a programmable processing apparatus to become operable to perform a method according to any of claims 1 to 7 and 17.

11. (Previously Presented) A scanner implementing a method according to any claims 1 to 6 and 17.

12. (Previously Presented) A copier machine implementing a method according to any claims 1 to 6 and 17.

13. (Previously Presented) A digital camera implementing a method according to any claims 1 to 6 and 17.

14. (Currently Amended) A device for performing block-based discrete wavelet transformation on an image signal, comprising:

a controller for dividing the image into a plurality of first blocks each consisting of (W pixels by H pixels);

a filtering circuit for performing a one-level forward wavelet transformation on each of the first blocks to produce sub-frequency band blocks LL, LH, HL, and HH; and

a memory circuit in which sub-frequency band blocks LL are stored in order to produce second blocks having the same size as the first blocks and each consisting of sub-frequency band blocks LL obtained in said filtering circuit from four of the first blocks,

wherein said filtering circuit performs a one-level forward wavelet transformation on the second blocks.

15. (Previously Presented) A coding method including a method according to any claims 1 to 7 and 17.

16. (Previously Presented) A coding apparatus including device according to claim 13.

17. (Previously Presented) A method according to claim 4, wherein, within a group of a resolution level i, the groups produced at resolution level (i-1) are processed according to a zigzag scanning order.

18. (Previously Presented) A device according to claim 14, comprising a number of memory circuits of the same size as the first blocks equal to the number of required resolution levels, each of the memory circuits being adapted to store sub-frequency band coefficients LL.